(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 30 September 2004 (30.09.2004)

PCT

(10) International Publication Number WO 2004/083594 A3

(51) International Patent Classification7: 43/10

E21B 23/00,

(21) International Application Number:

PCT/US2004/008171

(22) International Filing Date: 15 March 2004 (15.03.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/454,896

14 March 2003 (14.03.2003) US

(71) Applicant (for all designated States except US): ENVENTURE GLOBAL TECHNOLOGY [US/US]; 16200 A Park Row, Houston, TX 77084 (US).

(72) Inventors: and

(75) Inventors/Applicants (for US only): SHUSTER, Mark

[US/US]; 19115 Prospect Ridge Lane, Houston, TX 77094 (US). COSTA, Scott [US/US]: 2011 Willow Point, Kingwood, TX 77330 (US).

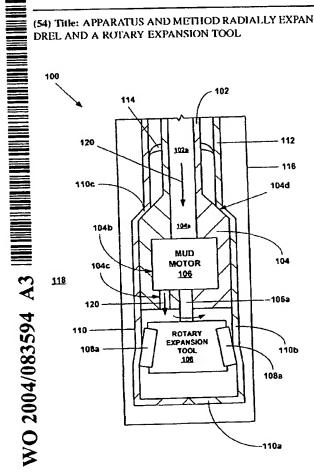
(74) Agent: MATTINGLY, Todd; Haynes and Boone, LLP, 901 Main Street, Suite 3100, Dallas, TX 75202 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CII, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, FG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: APPARATUS AND METHOD RADIALLY EXPANDING A WELLBORE CASING USING AN EXPANSION MANDREL AND A ROTARY EXPANSION TOOL



(57) Abstract: An apparatus and method for radially expanding a wellbore casing (112) using an expansion mandrel (104) and a rotary expansion tool (108).

BEST AVAILABLE COF

Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- (88) Date of publication of the international search report: 19 May 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/08171

A. CLASSIFICATION OF SUBJECT MATTER			
IPC(7) : E21B 23/00, 43/10 US CL : 166/380, 382, 207			
According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols)			
U.S.: 166/380, 382, 207, 206			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.
х	US 3,785,193 A (KINLEY et al) 15 January 1974 (15/	/01/1974), Figures 1-3.	2, 4-6 and 8-15
х	US 2.627,891 A (CLARK) 10 February 1953 (10/02/1953), Figures 1 and 4.		2, 4-6 and 8-15
A, P	US 6,543.552 A (METCALFE et al) 08 April 2003 (08/04/2003), Figures 1-7.		1-15
Α	US 3,818,734 A (BATEMAN) 25 June 1974 (25/06/1974), see Figure 1.		1-15
Α	US 2003/0024711 A1 (SIMPSON et al) 06 February 2003 (06/02/2003), Figure 2		1-15
Further documents are listed in the continuation of Box C. See patent family annex.			
"A" document defining the general state of the art which is not considered to be of particular relevance		"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be	
	oplication or patent published on or after the international filing date	"X" document of particular relevance; the considered novel or cannot be considered when the document is taken alone	ered to involve an inventive step
"O" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means		"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"P" document published prior to the international filing date but later than the "L" document member of the same patent family			
priority date claimed			
Date of the actual completion of the international search 11 January 2005 (11.01.2005)		16 FEB 2005	
Name and mailing address of the ISA/US A		Authorized officer	
Commissioner for Patents		Hoang Dang Alger Telephone No. 703-308-2168	for
Facsimile No. (703) 305-3230			

Form PCT/ISA/210 (second sheet) (January 2004)